

Weijia (Allen) Wang

M.S. student in Geography | University of Massachusetts Amherst

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Research interests

Ethical and responsible GeoAI; location privacy, geoprivacy, and place-based privacy; vision-language models for Earth observation; spatial modeling and geospatial analysis.

Education

University of Massachusetts Amherst

Aug. 2026-present

M.S. in Geography (thesis-based) | Amherst, Massachusetts

Department of Earth, Geographic, and Climate Sciences

Research with Dr. Hongyu Zhang | Focus: ethical GeoAI and location / place-based privacy

Northern Illinois University

Aug. 2024-May 2026

B.S. in Earth, Atmosphere and Environment - Geospatial Systems | DeKalb, Illinois

GPA: 3.897/4.000; Summa Cum Laude

2+2 dual-degree program with Lanzhou Jiaotong University

Lanzhou Jiaotong University

Sep. 2022-Jun. 2026

B.S. in Geographic Information Science | Lanzhou, China

Academic appointments & current internship

Teaching Assistant

Sep. 6, 2026-present

University of Massachusetts Amherst

Department of Earth, Geographic, and Climate Sciences

Intern, Spatial Data Lab Internship Program

Sep. 2026-present

Remote | Guidance: Yongze Song

- Currently developing a research proposal in GeoAI, Earth observation, spatial modeling, and geospatial analysis.

Publication & presentation

Wang, Weijia; Fang, Jichao; Luo, Wei. "Steering Instruction-Tuned Vision-Language Models for Multi-Label Landcover Classification." *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV) Workshops*, March 2026, pp. 1475-1483. CV4EO Workshop. Peer-reviewed archival proceedings.

Wang, Weijia; Fang, Jichao; Luo, Wei. "Parameter-Efficient Fine-Tuning of Vision-Language Models for High-Performance Earth Observation Tasks." *AGU Fall Meeting 2025*, New Orleans, Louisiana. **Oral presentation.**

Academic service

Program Committee Member / Reviewer

Sep. 2026-present

4th Computer Vision for Earth Observation (CV4EO) Workshop at WACV 2027

Research experience & projects

Undergraduate Student Researcher Aug. 2025-May 2026

Northern Illinois University | Supervisor: Prof. Wei Luo | DeKalb, Illinois

Project: instruction-tuned vision-language models for Earth observation (Apr. 2025-May 2026)

- Developed parameter-efficient supervised fine-tuning and model-steering workflows for multi-label land-cover classification using Qwen3-VL, 4-bit LoRA, and BigEarthNet-S2 imagery.
- Compared prompt engineering, chain-of-thought zero-shot, and fine-tuning baselines; analyzed inference-time precision-recall trade-offs, adaptation patterns, and LoRA sparsity.

Ground-penetrating radar inversion Oct. 2024-May 2025

Kaggle GprMax Deep Learning Challenge 1 (GDLC-1) | Remote

- Designed a TransUNet framework with a CNN encoder, Vision Transformer, and skip-connected decoder to reconstruct 2-D subsurface permittivity maps from GPR B-scans.
- Used gprMax FDTD simulations for data augmentation and a physics-aware loss combining MAE, SSIM, FFT, and gradient regularization in PyTorch.
- Achieved IoU of 0.873 on the hidden test set; ranked 1st among 14 finalist teams.

Remote-sensing LLM prototype Jan. 2024-Dec. 2024

College Students' Innovative Entrepreneurial Training Plan Program | Lanzhou, China

Lanzhou Jiaotong University | Supervisor: Prof. Haowen Yan

- Adapted VisualGLM-6B with LoRA for natural-language queries about Sentinel-2 imagery and Google Earth Engine assets; supported GeoJSON-based areas of interest and RGB+NIR previews.
- Deployed an interactive prototype with NVIDIA Triton Inference Server and Gradio; evaluated failure modes including spectral aliasing and ambiguous prompts.

Previous internships

Henan Remote Sensing Institute Jun. 2025-Jul. 2025

Intern, Satellite Remote Sensing Application Center | Zhengzhou, China

- Preprocessed remote-sensing imagery, extracted features, and performed classification; explored machine learning to improve repetitive analysis workflows.

Henan Academy of Agricultural Sciences May 2025-Jun. 2025

Intern, Institute of Agricultural Information Technology | Zhengzhou, China

- Collected and analyzed satellite, UAV, and crop-sampling data for winter-wheat yield estimation; labeled training samples and explored machine learning for data processing.

Honors & awards

- NIU: President's Student Service & Leadership Award (2026); Harold A. & Marjorie K. Winters Scholarship (2026); Richard E. Dahlberg Memorial Scholarship, top 2% (2025).
- NIU Dean's List: Fall 2024, Spring 2025, Fall 2025, Spring 2026.
- Second Prize, 2023 Gansu Province College Student GIS Map Making Application Skills Competition; top 10%, provincial level (2024).

Technical skills

Programming & machine learning: Python, PyTorch, LoRA/QLoRA fine-tuning, Git, C++, SPSS.

Geospatial: ArcGIS Pro, ERDAS, ENVI, QGIS, Google Earth Engine, GeoDa.